abcam

ab9566

Anti-Aquaporin 1 antibody [1/22]

Anti-Aquaporin 1 antibody [1/22] (ab9566) is a mouse monoclonal antibody detecting Aquaporin 1 in **Western Blot, Flow Cytometry, IHC-P**. Suitable for **Human, Rat**.

- Over 60 publications
- Trusted since 2002

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	Preservative: 0.097% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human AQP1 aa 200-300. The exact immunogen used to generate this antibody is proprietary information. Database link P29972
Clone number	1/22
Purification technique	Affinity purification Protein A
Epitope	Intracellular C-terminal AQP 1 epitope (active channel loop)
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1-2 µg for 10^6 Cells
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Sheep, Cow
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Sheep, Cow

Dilution info	-
Notes	-

IHC-P

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Sheep, Cow
Dilution info	-
Notes	-

Target data

See full target information AQP1

Function Forms a water channel that facilitates the transport of water across cell membranes, playing a crucial role in water homeostasis in various tissues (PubMed:1373524, PubMed:23219802). Could also be permeable to small solutes including hydrogen peroxide, glycerol and gases such as amonnia (NH3), nitric oxide (NO) and carbon dioxide (CO2) (PubMed:16682607, PubMed:17012249, PubMed:19273840, PubMed:33028705, PubMed:8584435). Recruited to the ankyrin-1 complex, a multiprotein complex of the erythrocyte membrane, it could be part of a CO2 metabolon, linking facilitated diffusion of CO2 across the membrane, anion exchange of Cl(-)/HCO3(-) and interconversion of dissolved CO2 and carbonic acid in the cytosol (PubMed:17012249, PubMed:35835865). In vitro, it shows non-selective gated cation channel activity and may be permeable to cations like K(+) and Na(+) in vivo (PubMed:36949749, PubMed:8703053).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-Aquaporin 1 antibody [1/22] (ab9566) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P) in Human, Rat samples.

What is the molecular weight of Aquaporin 1?
Anti-Aquaporin 1 [1/22] (ab9566) specifically detects a band for Aquaporin 1 (UniProt: P29972) at a molecular weight of 29kDa.

Trusted by the scientific community
Anti-Aquaporin 1 [1/22] (ab9566) was first used in a scientific publication in 2002 and has been cited over 60 times in peer-reviewed journals.

Reviewed by scientists
Anti-Aquaporin 1 [1/22] (ab9566) has over 15 independent reviews from customers.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Aquaporin 1 also known as Aquaporin-1 AQP-1 or AQP1 is a protein that functions as a water channel facilitating the transport of water across cell membranes. This protein plays an important role in maintaining water homeostasis within cells. Aquaporin 1 has a mass of approximately 28 kDa and is encoded by the AQP1 gene. It is expressed in various tissues and organs including the kidneys lungs and red blood cells indicating its importance in diverse physiological processes.
Biological function summary	Aquaporin 1 is not part of a complex but independently contributes to maintaining osmotic balance and fluid movement across epithelial and endothelial tissues. The protein's selective permeability for water without allowing ions or other solutes highlights its specificity in controlling water transport which is essential for maintaining cellular environment stability.

Pathways	The aquaporin protein is involved in key biological pathways such as the osmoregulatory pathway and the fluid secretion pathway. It maintains efficient water transport in processes like urine concentration in the kidneys and fluid regulation in the pulmonary system. Aquaporins in general are related to similar transport proteins like sodium channels which together play an important role in maintaining osmotic balance across various tissues.
Associated diseases and disorders	Aquaporin 1's dysfunction has been associated with conditions such as nephrogenic diabetes insipidus and pulmonary edema. These are linked to its role in water reabsorption in the kidneys and fluid balance in the lungs. The disorder's connection ties Aquaporin-1 with other regulatory proteins such as vasopressin receptors which work in conjunction to control renal water reabsorption and response to fluid imbalance.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

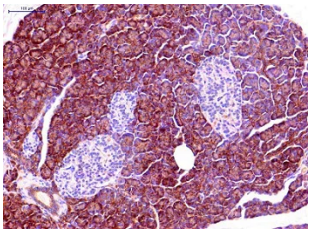
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

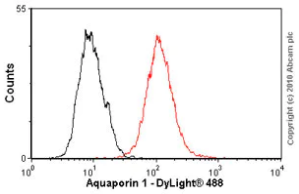
Full details and terms and conditions can be found here:
Terms & Conditions.

4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aquaporin 1 antibody [1/22] (ab9566)

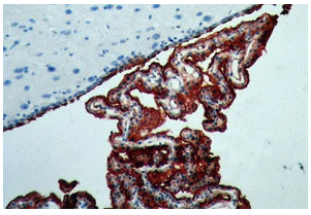
Immunohistochemical analysis of exocrine pancreas cells labeling Aquaporin 1 with ab9566.



Flow Cytometry - Anti-Aquaporin 1 antibody [1/22] (ab9566)

Aquaporin 1 Flow Cytometry staining using mouse Anti-Aquaporin 1 antibody

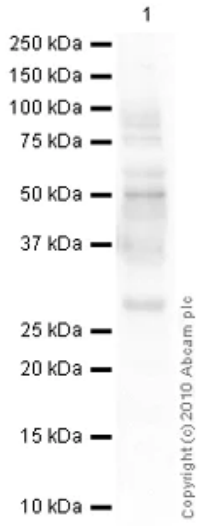
Overlay histogram showing HEK293 cells stained with ab9566 (red line). The cells were fixed with methanol (5 min) and then permeabilized with 0.1% PBS-Triton for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab9566, 2µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Triton used under the same conditions.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aquaporin 1 antibody [1/22] (ab9566)

Aquaporin 1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Aquaporin 1 antibody

Immunohistochemical staining of aquaporin 1 in rat brain.



Western blot - Anti-Aquaporin 1 antibody [1/22] (ab9566)

Aquaporin 1 Western blot staining of Human skeletal muscle tissue lysate - total protein (ab29330) using mouse Anti-Aquaporin 1 antibody

All lanes:
Western blot - Anti-Aquaporin 1 antibody [1/22] (ab9566) at 1 µg/mL

All lanes:
Human skeletal muscle tissue lysate - total protein (ab29330) at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 28 kDa

Observed band size: 29 kDa, 50 kDa, 75 kDa

Exposure time: 30s

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.